CONSERVATION DESIGN FORUM

Landscape Architecture • Community Planning • Ecological Restoration • Resource Management

THIRD-YEAR RESTORATION MONITORING REPORT FOR THE

BLACKWELL LANDFILL PRAIRIE RESTORATION

Prepared for:

MWH
175 West Jackson Boulevard
Suite 1900
Chicago, Illinois 60604-2814

December 2003

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CONSERVATION DESIGN FORUM
Project No. 03045.00

Prepared by: Kenneth Johnson Date: 02.04.04

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EXECUTIVE SUMMARY

- This report documents the restoration activities that occurred during the 2003-calendar year at the Blackwell Landfill prairie restoration.

- The primary stewardship activities included weed control and over-seeding. In addition, fire breaks were mowed late in the growing season in preparation of a controlled burn that is scheduled for the spring of 2004.

- The results of the vegetation monitoring indicate that the landscape is developing as should be expected for a recently-installed prairie reconstruction. The data represent the second full-growing season of the landscape.

INTRODUCTION

PROJECT SITE LOCATION AND PURPOSE

As depicted on EXHIBIT A – PROJECT LOCATION MAP, Blackwell Landfill is located north of Butterfield Road (Route 56), between Batavia Road and Winfield Road, in Warrenville, DuPage County, Illinois (SW1/4, Section 26, T39N, R9E). The site is owned and operated by the Forest Preserve District of DuPage County, Illinois. As detailed on EXHIBIT B – BLACKWELL LANDFILL PRAIRIE RESTORATION, the project area includes most of the slopes across the landfill at the forest preserve.

The purpose of the prairie restoration monitoring is two-fold. First, restoration monitoring is a fundamental component to all *de novo* ("from scratch") native landscape creations in order to assess the vegetation development from year to year and make recommendations as to proper land management. Another important purpose of the monitoring at this site is to provide data to the U.S. Environmental Protection Agency in regards to the development of the native landscape across the landfill slopes as outlined in the approved restoration plan (Montgomery Watson Harza and Conservation Design Forum, 2000).

RESTORATION ACTIVITIES CONDUCTED IN 2003

The following is a chronological list of the native landscape management activities that were conducted at the Blackwell Landfill Prairie Restoration site in 2003.

- *In mid and late June, large patches of White Sweet Clover and Field Thistle were* wicked (via a tractor-operated boom sprayer) with a 60% solution of *Roundup* herbicide.
- In late June through the middle of July, small patches of White Sweet Clover, Field Thistle, and Curly Dock were hand cut and/or sprayed with a glysophate herbicide.
- Large areas of the herbicided White Sweet Clover were mowed down in mid July, and Crown Vetch was mowed to prevent seed maturation.
- In the middle of August, miscellaneous dead trees were cut and removed from the native landscape and from the pine grove area located east of the toboggan run. (It appears the trees died as a result of natural senescence and not as a result of any conditions/circumstances directly attributable to the landfill.)
- The annual restoration monitoring event occurred on September 19th. The data represent the second full-growing season of the landscape.
- In late September and throughout October, Crown Vetch was sprayed with a 2,4-D herbicide via backpack sprayers. Fire breaks were mowed around the fences, the prairie perimeter, and around gas vaults in preparation for a spring 2004 controlled burn. Also, prairie seed was collected and stored for later dispersal in select areas.
- In November, areas of the herbicided Crown Vetch were raked and removed from the back slopes. In early December, prairie grass seed was hand-sown over these areas and raked into the soil; this was followed by an application of a wood/paper hydro-mulch. APPENDIX I is a list of the species used in this re-seeding effort.

Overall, these management activities were performed in a timely and professional manner by the staff of McGinty Brothers, Inc. (Long Grove, IL), the landscape maintenance contractor.

MONITORING METHODS

Although there are many ways to monitor *de novo* restorations and measure their performance, the approach utilized in this project emphasizes vegetation development and floristic quality assessment (FQA) methods. This is consistent with the approved landscape restoration plan and this monitoring strategy has been utilized at the site over the past two years. In summary, the vegetation is sampled along transect lines established within representative portions of the project site, and a qualitative inventory of the vegetation across the entire landscape is recorded as well. These vegetation sampling protocols are repeated every year so that trends in floristic development can be monitored over time.

A critical component in the evaluation of a restoration is to determine the extent of native species recruitment and establishment across the landscape. A useful method in the determination of floristic quality is through an analysis of the conservatism and diversity of species that are recorded during the monitoring event. Conservatism represents the degree to which an experienced field botanist has confidence that a given species is representative of a high-quality, remnant habitat (i.e., those natural areas with intact presettlement structure, composition, and processes). Native plant species display varying degrees of tolerance to disturbance, as well as varying degrees of fidelity to specific habitat integrity. Native plants of a given region exhibit an observable range of conservatism, and each native species can be assigned a *coefficient of conservatism* (C value) ranging from 0 to 10, "weedy to conservative," that reflects its disposition.

The Mean C is the average coefficient of conservatism for a site. The floristic quality index (FQI) is a statistic derived by multiplying Mean C by the square root of the number of species inventoried; thus, the FQI is a function of conservatism and diversity. In general, site inventories with FQI values less than 20 are degraded or derelict plant communities, or are very small habitat remnants. Site inventories with FQI values in the twenties through low thirties suffer from various kinds of disturbance, but generally have potential for habitat restoration and recovery. When site inventories have FQI values in the middle thirties or higher, and/or have Mean C values of 3.4 or higher, one can be confident that there is sufficient native character present for the area to be at least regionally noteworthy. Site inventories with indices in the middle forties and higher are undoubtedly significant natural area remnants of statewide importance.

As management and time cause changes to take place, Mean C and FQI values will reflect the extent to which conservative species are being recruited and the floristic quality is improving. If an inventoried site has a large proportion of conservative plants, the Mean C is higher; in a degraded site, the Mean C is lower. The presence of a large proportion of adventive species and non-conservative native species suggest that an area is degraded. The Mean C and FQI values for a sampling transect are calculated for the transect as a whole and for the average quadrat; a comparison of floristic values between the transect and quadrat level is useful to understand the uniformity of native species establishment.

Another useful measurement that is important in the evaluation of a *de novo* landscape restoration is that of the wetness value (W). Each plant species has been assigned a wetness category that indicates its probability of occurrence in a wetland. Plants are designated as *Obligate Wetland* (OBL=-5), *Facultative Wetland* (FACW=-3), *Facultative* (FAC=0), *Facultative Upland* (FACU=3), and *Obligate Upland* (UPL=5). For about 20% of our flora, a "+" or "−" sign has been attached to the three *Facultative* categories to express the exaggerated tendencies of those species. The "+" sign denotes that the species generally has a greater estimated probability of occurrence in wetlands; the "−" sign denotes that it

generally has a lesser estimated probability of occurrence in wetlands. Mean wetness values can be compared from year to year to gain an understanding on what type of plant species have become established across the restoration site.

Four (4) straight-line transects have been established across the prairie restoration. A description of each transect location is as follows, and their locations are depicted on EXHIBIT B. These are the same transects used in the restoration monitoring events that were conducted in the previous two years.

Transect 1 is located at vault cover "DV 10" in the northwestern portion of the site. The transect is oriented 0° north, and the first quadrat is placed 10 paces north of the vault cover.
Transect 2 is located at vault cover "DV 17" in the western portion of the site. The transect is oriented 90° east, and the first quadrat is placed 5 paces east of the vault cover.
Transect 3 is located at vault cover "DV 13" in the southeastern portion of the site. The transect is oriented 180° west. The first quadrat is placed 5 paces west of the vault cover.
Transect 4 is located at vault cover "DV 18" in the northeastern portion of the site. The transect is oriented 45° northeast. The first quadrat is placed 5 paces northeast of the vault cover.

A 0.25m^2 quadrat is placed at 10-pace intervals along each transect line until 10 quadrats are sampled. The vegetation within each quadrat is identified and given a relative cover/abundance number from 1 to 5 as shown in the table below. A compass is used to stay on the correct orientation, and photographs are taken at the start of each transect in order to document the current site conditions.

COVER/ ABUNDANCE NUMBER	APPROXIMATE COVER
1	1 to 5 plants present
2	5% to 25% cover
3	25% to 75% cover
4	Common/scattered throughout
5	Ubiquitous

The cover/abundance data is used to determine the relative importance value (RIV) for each species recorded along a transect. The RIV of each species is calculated by summing relative frequency and relative cover and dividing by 2. This and other information gathered via transect sampling offers important quantitative data that is used to interpret the development of the native landscape.

RESULTS AND DISCUSSION

The results of the plant inventories and transect sampling are presented below. The field work occurred on September 19th, 2003, and was performed by Kenneth Johnson. The weather conditions during the monitoring event were partly sunny, with air temperatures around 65° Fahrenheit, so sampling conditions were optimum. Photographs taken during the field work are included at the back of the report. Refer to EXHIBIT B for a plan view of the project site.

GENERAL PLANT INVENTORY AND FQA DATA

The results of the plant inventory and associated FQA data for the Blackwell Landfill prairie restoration are presented in Appendix II. The table below summarizes the total number of native species recorded during the inventory (NS), along with the percent that these native species comprise of all plants recorded (%TS). The last two columns are the native Mean C and FQI values. For comparative purposes, these same data are presented from the restoration monitoring conducted in the previous two years. Also shown is similar data from 1999 when a fall vegetation inventory of the landfill slopes was conducted (as part of the initial planning efforts for the landfill landscape, prior to any landscape restoration).

PLANT INVENTORY & FQA DATA SUMMARY			
Year	NS (%TS)	Mean C	FQI
1999	37 (44%)	1.8	11
2001	54 (48%)	1.8	13
2002*	42 (46%)	2.2	14
2003	71 (56%)	2.5	22

* = First full-growing season.

Overall, the most frequently encountered species noted during the meander/inventory were Crown Vetch (restricted almost exclusively to the steep, upper south- and west-facing slopes), Barnyard Grass, Common Ragweed, and Giant Ragweed. Other relatively common plants that are found across the prairie restoration include Garlic Mustard, White Sweet Clover, and prairie grasses (e.g., Little Bluestem Grass, Side-oats Grama, Indian Grass, etc.).

The results of the inventory data indicate a positive trend in the establishment of the initial landscape restoration. Based upon these data and general site observations during the year, the prairie appears to be developing as expected for having completed its second full-growing season since installation (in early summer of 2001). It is likely that these FQA values will show an increase in 2004 data, providing that continued stewardship of the landscape is performed—in particular a controlled burn as scheduled for the spring of 2004. By 2006, it is nearly certain that the FQA data will level off, unless a program for species enrichment is planned and implemented.

TRANSECT SAMPLING AND FQA DATA

The results of the four straight-line transects are presented in APPENDIX III. As stated above, each transect runs through a representative portion of the prairie landscape, and each is the same as that sampled in the two previous years. Transect sampling helps to quantify the vegetation changes and landscape development at the site. A comparison of floristic values between the transect and quadrat level data is useful to understand the uniformity of native species establishment.

The table below presents a summary of the data collected for each transect. The aggregate transect data are presented separately from the average quadrat data. The number of native taxa (NT) is given; the native Mean C; and the native FQI. The results from the previous two years are included for comparative purposes.

TRANSECT/YR	TRANSECT DATA SUMMARY			AVE QUADRAT DATA SUMMARY		
	NT	MEAN C	FQI	NT	MEAN C	FQI
T1						
2001	6	2.5	6	1.7	0.7	1
2002	11	1.8	6	2.4	2.7	4
2003	12	2.7	9	3.1	2.9	5
T2						
2001	9	3.6	11	0.9	1.0	2
2002	8	2.5	7	1.4	2.6	4
2003	11	2.7	9	2.0	2.3	4
T3						
2001	8	0.6	2	2.1	0.2	<1
2002	11	2.1	7	2.8	1.4	3
2003	12	2.7	9	3.7	2.1	5
T4						
2001	8	0.6	2	2.4	0.1	<1
2002	13	3.0	11	3.3	4.4	7
2003	22	3.1	15	5.6	3.2	8

Overall, there has been an increase in the number of native taxa recorded along each transect and within each quadrat. In regards to the transect data summary, all of the transects show a general increase in Mean C and FQI values. And in regards to the average quadrat data, all except Transect 2 show increases in native species occurrence and FQA values. Overall, these are positive trends; the values for Transect 4, in particular, are impressive.

The four tables below summarize the relative importance values (RIV) for the top 50% of species from each transect. The results from the previous two year's sampling are included for comparative purposes. Brackets ([ ]) indicate the species was recorded in the sampling but not in the top 50% for that year, and a dash (-) indicates that it was not recorded during the sampling event. Following each native species is its assigned C value (in parenthesis). Adventive species are in ALL CAPS. Species followed by an asterisk (*) were introduced to the site as part of the initial prairie seed installation in the summer of 2001, and from the reseeding efforts in 2002 and 2003.

TRANSECT 1	RIV		
SPECIES (C VALUE)	2001	2002	2003
DIGITARIA ISCHAEMUM	24.4	-	-
Echinochloa crusgalli (0)	22.1	[5.2]	12.2
HIBISCUS TRIONUM	9.0	[2.0]	8.0
MELILOTUS ALBA	[2.0]	22.7	[1.3]

TRANSECT 1	RIV		
SPECIES (C VALUE)	2001	2002	2003
Bouteloua curtipendula (8)*	[1.5]	14.8	11.7
Ambrosia artemisiifolia (0)	-	12.3	6.7
FESTUCA ELATIOR	[2.0]	7.1	[3.6]
TRIFOLIUM PRATENSE	-	-	8.8
SETARIA FABERI	-	[1.6]	5.7

TRANSECT 2	RIV		
SPECIES (C VALUE)	2001	2002	2003
CORONILLA VARIA	25.5	19.7	14.1
BROMUS INERMIS	11.1	[2.5]	7.9
ALLIARIA PETIOLATA	9.1	6.9	8.8
ATRIPLEX PATULA	5.9	-	-
SOIL	[2.1]	11.0	-
Bouteloua curtipendula (8)*	[2.7]	9.4	4.8
Panicum virgatum (5)*	-	5.6	5.3
LEPIDIUM CAMPESTRE	-	-	6.1
Solidago altissima (1)	-	[4.4]	4.4

TRANSECT 3	RIV		
SPECIES (C VALUE)	2001	2002	2003
Echinochloa crusgalli (0)	21.9	14.0	-
SETARIA FABERI	21.9	16.7	[2.3]
Polygonum pensylvanicum (0)	7.7	12.5	-
Ambrosia artemisiifolia (0)	[2.5]	7.2	11.9
Ambrosia trifida (0)	-	[6.8]	13.2
POA PRATENSIS	-	[4.9]	12.9
Bouteloua curtipendula (8)*	-	[6.8]	12.4

TRANSECT 4	RIV		
SPECIES (C VALUE)	2001	2002	2003
LOLIUM MULTIFLORUM	14.7	[1.5]	5.0
Polygonum pensylvanicum (0)	12.1	-	[1.0]
Echinochloa crusgalli (0)	11.3	7.4	-
ABUTILON THEOPHRASTI	8.3	[2.6]	-
CHENOPODIUM ALBUM	7.6	-	-
SETARIA FABERI	-	14.7	[3.8]
Bouteloua curtipendula (8)*	-	14.4	7.3

TRANSECT 4	RIV		
SPECIES (C VALUE)	2001	2002	2003
SETARIA GLAUCA	[4.5]	6.3	[1.0]
Panicum virgatum (5)*	-	5.2	[3.4]
Rudbeckia hirta (1)*	[1.1]	4.4	5.8
LACTUCA SERRIOLA	-	[3.3]	10.5
Andropogon gerardii (5)*	-	[3.0]	7.2
Andropogon scoparius (5)*	-	[1.5]	5.6
CIRSIUM ARVENSE	-	[3.3]	4.4
Heliopsis helianthoides (5)*	-	[2.2]	4.4

Transect 2 is an area where active weed control efforts (for Crown Vetch and Garlic Mustard) and re-seeding are on-going. The results of this management should become more and more evident over the next few years. Most of Transect 4 extends across a well-established stand of prairie species. There is reason to believe that with continued weed maintenance, the other portions of the site will have values similar to Transect 4.

SEEDED SPECIES RECRUITMENT

An alphabetical list of the 37 native species that were seeded as part of the prairie landscape installation in May and June of 2001 are presented in the table below. Each species is listed along with its C value (in parenthesis). If the species was recorded from the site during the 2003-monitoring event it is indicated with a "Y", and if not it is indicated with a "N". The columns to the right summarize the RIV of each species if recorded during the transect sampling; these same data from 2001 and 2002 are shown for comparison.

SEEDED SPECIES	RELATIVE IMPORTANCE VALUES											
(C VALUE)	TRANSECT 1			TRANSECT 2			TRANSECT 3			TRANSECT 4		
	'01	'02	'03	'01	'02	'03	'01	'02	'03	'01	'02	'03
Andropogon gerardii (5)Y	-	-	3.1	-	-	-	-	1.9	1.8	-	3.0	7.2
Andropogon scoparius (5)Y	-	1.6	1.3	-	-	-	-	-	-	-	1.5	5.6
Aquilegia canadensis (6)N	-	-	-	-	-	-	-	-	-	-	-	-
Aster azureus (8)N	-	-	-	-	-	-	-	-	-	-	-	-
Aster ericoides (5)Y	-	-	-	-	-	-	-	-	-	-	-	2.4
Aster laevis (9)N	-	-	-	-	-	-	-	-	-	-	-	-
Aster novae-angliae (4)Y	-	-	-	-	-	-	-	-	-	-	-	2.0
Astragalus canadensis (10)Y	-	-	-	-	-	-	-	-	-	-	-	-
Baptisia leucantha (8)N	-	-	-		-	-	-	-	-	-	-	-
Bouteloua curtipendula (8)Y	1.5	14.8	11.7	2.7	9.4	4.8	-	6.8	12.4	-	14.4	7.3
Coreopsis palmata (6)N	-	-	-	-	-	-	-	-	-	-	-	-
Coreopsis tripteris (5)N	-	-	-	-	-	-	-	-	-	-	-	-
Desmodium canadense (4)N	-	-	-	-	-	-	-	-	-	-	-	-
Echinacea purpurea (3)Y	1.5	-	1.3	2.1	-	-	-	-	-	-	-	3.0
Elymus canadensis (4)Y	-	-	-	-	-	-	-	1.5	4.5	-	1.1	3.8
Eryngium yuccifolium (9)N	-	-	-	-	-	-	-	-	-	-	-	-
Helianthus mollis (9)Y	-	-	-	-	-	-	-	-	-	-	-	1.0
Helianthus rigidus (8)N	-	-	-	-	-	-	-	-	-	-	-	-
Heliopsis helianthoides (5)Y	-	1.6	1.8	1.6	-	-	-	-	-	-	2.2	4.4
Lespedeza capitata (4)N	-	-	-	-	-	-	-	-	-	-	-	-
Liatris spicata (6)N	-	-	-	-	-	-	-	-	-	-	-	-
Monarda fistulosa (4)Y	-	-	-	1.6	-	1.8	-	-	1.4	1.1	-	1.0

SEEDED SPECIES (C VALUE)	RELATIVE IMPORTANCE VALUES											
	TRANSECT 1			TRANSECT 2			TRANSECT 3			TRANSECT 4		
	'01	'02	'03	'01	'02	'03	'01	'02	'03	'01	'02	'03
Panicum virgatum (5)Y	-	-	3.1	-	5.6	5.3	-	5.6	9.6	-	5.2	3.4
Parthenium integrifolium (8)N	-	-	-	-	-	-	-	-	-	-	-	-
Penstemon digitalis (4)N	-	-	-	-	-	-	-	-	-	-	-	-
Petalostemum purpureum (9)Y	-	-	-	-	-	-	-	-	-	-	-	-
Physostegia virginiana (6)N	-	-	-	-	-	-	-	-	-	-	-	-
Pycnanthemum virgin. (5)N	-	-	-	-	-	-	-	-	-	-	-	-
Ratibida pinnata (4)Y	-	-	-	-	-	-	-	-	-	-	-	-
Rudbeckia hirta (1)Y	3.5	2.0	-	2.1	-	-	-	-	1.4	1.1	4.4	5.8
Silphium integrifolium (5)Y	-	-	-	-	-	-	-	-	-	-	-	-
Silphium laciniatum (5)Y	-	-	-	-	-	-	-	-	-	-	-	1.0
Silphium terebinthinaceum (5)N	-	-	-	-	-	-	-	-	-	-	-	-
Solidago graminifolia (4)N	-	-	-	-	-	-	-	-	-	-	-	-
Solidago nemoralis (4)N	-	-	-	-	-	-	-	-	-	-	-	-
Solidago rigida (4)Y	-	-	-	-	-	-	-	-	-	-	-	-
Sorghastrum nutans (5)Y	-	-	-	1.6	5.0	2.6	-	-	1.8	-	1.8	2.4

In summary, nineteen (19) of the 37 seeded species were recorded during the monitoring event in September of 2003; twelve (12) were recorded in 2002, and ten (10) were recorded in 2001. As stated in last years report, none of the seeded species were in the top 50% RIV in the first two years of the native landscape restoration (2001 and 2002). With this years data, however, six prairie species were in the top 50% RIV, including: Big Bluestem Grass; Little Bluestem Grass; Side-oats Grama; Switch Grass; False Sunflower; and Black-eyed Susan. Future restoration monitoring should be compared to these data in order to show trends in the establishment of the intended native landscape. With time and proper land management there should be an increase in native species recruitment and quality across all areas of the restoration site.

The number of seeded species recorded during the monitoring event and their Mean C value is summarized in the table below. The data are compared to the 2001 monitoring results and the initial seed matrix. With time and proper land management there should be an increase in the number of seeded species recorded from the site.

SEEDED SPECIES RECRUITMENT		
YEAR	NO. SPECIES	MEAN C
2001 Seeding	37	5.6
2001	10	4.5
2002*	12	4.8
2003	19	5.3

* = First full-growing season.

In general, after four (4) full-growing seasons approximately 40% of the seeded species should be recorded in a site inventory—and if so, then the initial seeding should be considered satisfactory. Based upon the 2003 data, after two full-growing seasons approximately 51% of the seeded species are present.

The native Mean W of the site is summarized in the table below, and includes this same value from the 2001 and 2002 monitoring events. These are compared to the Mean W of the 37 seeded species. A trend downward in Mean W values is typical of early restoration sites such as the Blackwell Landfill site.

MEAN W OF RESTORATION SITE			
2001 SEEDING	2001	2002	2003
2.5	1.5	1.3	1.4

SUMMARY

As presented above, native land management activities across the Blackwell Landfill Prairie Restoration in 2003 included: select weed control and woody plant removal; erosion repair; re-seeding; and mowing fire breaks.

The results of the vegetation monitoring data are typical of landscape restorations that are in their early stages of development. Some areas of the landscape are developing well, in particular on the north- and east-facing slopes east of the toboggan run. Other areas will require more time and continued weed control. It will be interesting to monitoring the vegetation in light of a landscape burn scheduled for the spring of 2004.

GENERAL REFERENCES

The following documents were reviewed and referenced in the preparation of this report.

Conservation Design Forum. 2001. First Year Restoration Monitoring Report for the Blackwell Landfill Prairie Restoration. Elmhurst, IL.

Montgomery Watson and Conservation Design Forum. 2001. Contractor Bid Package for Phase 1 Prairie Landscape Installation and Post-planting Maintenance. Warrenville, IL.

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APPENDICES

APPENDIX I

SPECIES RE-SEEDING LISTS

The plants listed in the two tables below were used to re-seed portions of the prairie landscape at the Blackwell Landfill Prairie Restoration site in 2002 and 2003. (The initial prairie seed list is on page 7 and 8 of the report.)

In the fall of 2002, the following species were used to re-seed: immediately west and north of the Tube Run; east of the Tube Run; on portions of the steep slopes on the west side of the landfill; and along a portion of the gravel haul road where erosional rills were repaired.

2002 RE-SEEDING		
SPECIES	COMMON NAME	LBS/ACRE
Andropogon gerardii	Big Bluestem Grass	5.0
Andropogon scoparius	Little Bluestem Grass	5.0
Asclepias syriaca	Common Milkweed	0.063
Aster ericoides	Heath Aster	0.031
Aster novae-angliae	New England Aster	0.250
Astragalus canadensis	Canada Milk Vetch	0.063
Baptisia leucantha	White Wild Indigo	0.063
Bouteloua curtipendula	Side-oats Grama	5.0
Cassia fasciculata	Partridge Pea	0.125
Desmodium canadense	Canada Tick Trefoil	0.031
Echinacea pallida	Pale Purple Coneflower	0.063
Echinacea purpurea	Broad-lvd. Purple Coneflower	0.375
Elymus canadensis	Wild Canada Rye	8.0
Eryngium yuccifolium	Rattlesnake Master	0.375
Heliopsis helianthoides	False Sunflower	0.125
Lespedeza capitata	Round-headed Bush Clover	0.125
Monarda fistulosa	Wild Bergamot	0.031
Panicum virgatum	Switch Grass	1.0
Parthenium integrifolium	Wild Quinine	0.375
Penstemon digitalis	Foxglove Beardtongue	0.063
Petalostemum purpureum	Purple Prairie Clover	0.250
Ratibida pinnata	Yellow Coneflower	0.250
Rudbeckia hirta	Black-eyed Susan	0.375
Rudbeckia subtomentosa	Sweet Black-eyed Susan	0.063
Solidago rigida	Stiff Goldenrod	0.375
Sorghastrum nutans	Indian Grass	12.0

In early December of 2003, the following species were sown over portions of the steep slopes on the south and west sides of the landfill. The size of these areas totals approximately two (2) acres. See the report for more information.

2003 RE-SEEDING		
SPECIES	COMMON NAME	LBS/ACRE
Andropogon gerardii	Big Bluestem Grass	4.0
Andropogon scoparius	Little Bluestem Grass	5.0
Bouteloua curtipendula	Side-oats Grama	5.0
Elymus canadensis	Wild Canada Rye	1.0
Panicum virgatum	Switch Grass	1.0
Sorghastrum nutans	Indian Grass	2.0

APPENDIX II

VEGETATION INVENTORY & FLORISTIC QUALITY ASSESSMENT

The following is a summary of the inventory data generated using Wilhelm and Masters' *Floristic Quality Assessment and Computer Applications*, 1999. Plant nomenclature follows Swink and Wilhelm's *Plants of the Chicago Region, 1994*. More information on floristic quality assessment methodology can be found in *Erigenia*, number 15, November, 1997. The plant inventory and assessment is divided into 2 sections as follows.

Section 1 includes three tables that summarize the inventory assessment data. The table to the left is an analysis of the floristic quality of the project area. In addition to listing the number of native species and total number of species, the mean coefficient of conservatism (MEAN C), floristic quality index (FQI), and mean wetness (MEAN W) values are presented. These are calculated once for native species only, and a second time including adventive species (W/Adventives). The two other tables summarize the number and percent of species in each physiognomic group (A=annual, B=biennial, P=perennial, W=woody, H=herbaceous).

Section 2 includes the plant inventory arranged alphabetically, with each species preceded by its database acronym and coefficient of conservatism (C=0 to 10, weedy to conservative); and followed by its wetness coefficient (W=-5 to +5, wet to dry), corresponding national wetland indicator status (OBL=obligate wetland species, FAC=facultative species, UPL=upland species), physiognomic group, and common name. Adventive species are written in ALL CAPS and have an asterisk (*) for their C value.

The Mean C is the average coefficient of conservatism for the site. The FQI is derived by multiplying Mean C by the square root of the number of species present. In general, sites with FQI values less than twenty are degraded or derelict plant communities, or are very small habitat remnants. Sites with FQI values in the twenties through low thirties suffer from various kinds of disturbance, but generally have potential for habitat restoration and recovery. When sites have FQI values in the middle thirties or higher, one can be confident that there is sufficient native character present for the area to be at least regionally noteworthy. Sites with indices in the middle forties and higher are often also statewide significant natural areas.

Site: **Blackwell Landfill Prairie Restoration**
Locale: Warrenville, IL
Date: September 19, 2003
By: Conservation Design Forum (K. Johnson)
File: c:\fqa\studies\blackwell2003.inv

SECTION 1. SUMMARY TABLES

FLORISTIC QUALITY DATA		Native			Adventive		
71	NATIVE SPECIES	Tree	10	7.9%	Tree	2	1.6%
126	Total Species	Shrub	3	2.4%	Shrub	2	1.6%
2.5	NATIVE MEAN C	W-Vine	2	1.6%	W-Vine	0	0.0%
1.4	W/Adventives	H-Vine	0	0.0%	H-Vine	0	0.0%
21.5	NATIVE FQI	P-Forb	30	23.8%	P-Forb	12	9.5%
16.1	W/Adventives	B-Forb	3	2.4%	B-Forb	12	9.5%
1.4	NATIVE MEAN W	A-Forb	12	9.5%	A-Forb	14	11.1%
2.1	W/Adventives	P-Grass	7	5.6%	P-Grass	7	5.6%
AVG:	Faculative (-)	A-Grass	4	3.2%	A-Grass	6	4.8%
		P-Sedge	0	0.0%	P-Sedge	0	0.0%
		A-Sedge	0	0.0%	A-Sedge	0	0.0%
		Cryptogam	0	0.0%			

SECTION 2. SPECIES INVENTORY

ACRONYM	C	SCIENTIFIC NAME	W	WETNESS	PHYSIOGNOMY	COMMON NAME
ABUTHE	0	ABUTILON THEOPHRASTI	4	FACU-	Ad A-Forb	VELVETLEAF
ACENEG	0	Acer negundo	-2	FACW-	Nt Tree	BOX ELDER
ACESAI	0	Acer saccharinum	-3	FACW	Nt Tree	SILVER MAPLE
ACHMIL	0	ACHILLEA MILLEFOLIUM	3	FACU	Ad P-Forb	YARROW
AGRREP	0	AGROPYRON REPENS	3	FACU	Ad P-Grass	QUACK GRASS
AGRALA	0	AGROSTIS ALBA	-3	FACW	Ad P-Grass	REDTOP
ALLPET	0	ALLIARIA PETIOLATA	0	FAC	Ad B-Forb	GARLIC MUSTARD
AMAPOW	0	AMARANTHUS POWELLII	5	UPL	Ad A-Forb	TALL AMARANTH
AMBARE	0	Ambrosia artemisiifolia elatior	3	FACU	Nt A-Forb	COMMON RAGWEED
AMBTRI	0	Ambrosia trifida	-1	FAC+	Nt A-Forb	GIANT RAGWEED
ANDGER	5	Andropogon gerardii	1	FAC-	Nt P-Grass	BIG BLUESTEM GRASS
ANDSCO	5	Andropogon scoparius	4	FACU-	Nt P-Grass	LITTLE BLUESTEM GRASS
ARCMIN	0	ARCTIUM MINUS	5	UPL	Ad B-Forb	COMMON BURDOCK
ASCSYR	0	Asclepias syriaca	5	UPL	Nt P-Forb	COMMON MILKWEED
ASCVER	1	Asclepias verticillata	5	UPL	Nt P-Forb	WHORLED MILKWEED
ASTERI	5	Aster ericoides	4	FACU-	Nt P-Forb	HEATH ASTER
ASTNOV	4	Aster novae-angliae	-3	FACW	Nt P-Forb	NEW ENGLAND ASTER
ASTPIL	0	Aster pilosus	2	FACU+	Nt P-Forb	HAIRY ASTER
ASTCAN	10	Astragalus canadensis	5	[UPL]	Nt P-Forb	CANADIAN MILK VETCH
BARVUL	0	BARBAREA VULGARIS	0	FAC	Ad B-Forb	YELLOW ROCKET
BIDCON	5	Bidens connata	-5	OBL	Nt A-Forb	PURPLE-STEMMED TICKSEED
BIDFRO	1	Bidens frondosa	-3	FACW	Nt A-Forb	COMMON BEGGAR'S TICKS
BOUCUR	8	Bouteloua curtipendula	5	UPL	Nt P-Grass	SIDE-OATS GRAMA
BRANIG	0	BRASSICA NIGRA	5	UPL	Ad A-Forb	BLACK MUSTARD
BROJAP	0	BROMUS JAPONICUS	3	FACU	Ad A-Grass	JAPANESE CHESS
BROTEC	0	BROMUS TECTORUM	5	UPL	Ad A-Grass	DOWNY BROME
CHEALB	0	CHENOPODIUM ALBUM	1	FAC-	Ad A-Forb	LAMB'S QUARTERS
CICINT	0	CICHORIUM INTYBUS	5	UPL	Ad P-Forb	CHICORY
CIRARV	0	CIRSIUM ARVENSE	5	UPL	Ad P-Forb	FIELD THISTLE
CIRVUL	0	CIRSIUM VULGARE	4	FACU-	Ad B-Forb	BULL THISTLE
CONSEP	1	Convolvulus sepium	0	FAC	Nt P-Forb	HEDGE BINDWEED
CORVAR	0	CORONILLA VARIA	5	UPL	Ad P-Forb	CROWN VETCH
DACGLO	0	DACTYLIS GLOMERATA	3	FACU	Ad P-Grass	ORCHARD GRASS
DAUCAR	0	DAUCUS CAROTA	5	UPL	Ad B-Forb	QUEEN ANNE'S LACE
ECHPUR	3	Echinacea purpurea	5	UPL	Nt P-Forb	BROAD-LEAVED PURPLE CONEFLOWER
ECHCRU	0	Echinochloa crusgalli	-3	FACW	Nt A-Grass	BARNYARD GRASS
ELAUMB	0	ELAEAGNUS UMBELLATA	5	UPL	Ad Shrub	AUTUMN OLIVE
ELYCAN	4	Elymus canadensis	1	FAC-	Nt P-Grass	CANADA WILD RYE
ERASPE	3	Eragrostis spectabilis	5	UPL	Nt P-Grass	PURPLE LOVE GRASS
ERIANS	0	Erigeron annuus	1	FAC-	Nt B-Forb	ANNUAL FLEABANE
ERICAN	0	Erigeron canadensis	1	FAC-	Nt A-Forb	HORSEWEED
EUPALT	0	Eupatorium altissimum	3	[FACU]	Nt P-Forb	TALL BONESET
EUPSEM	0	Eupatorium serotinum	-1	FAC+	Nt P-Forb	LATE BONESET
EUPMAA	0	Euphorbia maculata	3	FACU	Nt A-Forb	EYEBANE
EUPSUP	0	Euphorbia supina	4	FACU-	Nt A-Forb	SPOTTED CREEPING SPURGE
FESELA	0	FESTUCA ELATIOR	2	FACU+	Ad P-Grass	TALL FESCUE

FRAPES	1	Fraxinus pennsylvanica subintegerrima	0	FAC	Nt Tree	GREEN ASH
GLETRI	2	Gleditsia triacanthos	0	FAC	Nt Tree	HONEY LOCUST
HELMOL	9	Helianthus mollis	5	UPL	Nt P-Forb	DOWNY SUNFLOWER
HELSTR	5	Helianthus strumosus	5	UPL	Nt P-Forb	PALE-LEAVED SUNFLOWER
HELHEL	5	Heliopsis helianthoides	5	UPL	Nt P-Forb	FALSE SUNFLOWER
HIBTRI	0	HIBISCUS TRIONUM	5	UPL	Ad A-Forb	FLOWER-OF-AN-HOUR
JUNTOR	4	Juncus torreyi	-3	FACW	Nt P-Forb	TORREY'S RUSH
JUNVIC	2	Juniperus virginiana crebra	3	FACU	Nt Tree	RED CEDAR
KOCSCO	0	KOCHIA SCOPARIA	4	FACU-	Ad A-Forb	BURNING BUSH
LACCAN	2	Lactuca canadensis	2	FACU+	Nt B-Forb	WILD LETTUCE
LACSER	0	LACTUCA SERRIOLA	0	FAC	Ad B-Forb	PRICKLY LETTUCE
LEOCAR	0	LEONURUS CARDIACA	5	UPL	Ad P-Forb	MOTHERWORT
LEPCAM	0	LEPIDIUM CAMPESTRE	5	UPL	Ad B-Forb	FIELD CRESS
LEPVIR	0	Lepidium virginicum	4	FACU-	Nt A-Forb	COMMON PEPPERCRESS
LINUSI	0	LINUM USITATISSIMUM	5	UPL	Ad A-Forb	COMMON FLAX
LOLMUL	0	LOLIUM MULTIFLORUM	5	UPL	Ad A-Grass	ITALIAN RYE GRASS
LOTCOR	0	LOTUS CORNICULATUS	1	FAC-	Ad P-Forb	BIRD'S FOOT TREFOIL
LYCALB	0	LYCHNIS ALBA	5	UPL	Ad A-Forb	WHITE CAMPION
MEDLUP	0	MEDICAGO LUPULINA	1	FAC-	Ad A-Forb	BLACK MEDICK
MEDSAT	0	MEDICAGO SATIVA	5	UPL	Ad P-Forb	ALFALFA
MELALB	0	MELILOTUS ALBA	3	FACU	Ad B-Forb	WHITE SWEET CLOVER
MELLOF	0	MELILOTUS OFFICINALIS	3	FACU	Ad B-Forb	YELLOW SWEET CLOVER
MONFIS	4	Monarda fistulosa	3	FACU	Nt P-Forb	WILD BERGAMOT
NEPCAT	0	NEPETA CATARIA	1	FAC-	Ad P-Forb	CATNIP
OENBIE	0	Oenothera biennis	3	FACU	Nt B-Forb	COMMON EVENING PRIMROSE
PANCAP	1	Panicum capillare	0	FAC	Nt A-Grass	OLD WITCH GRASS
PANDII	0	Panicum dichotomiflorum	-2	FACW-	Nt A-Grass	KNEE GRASS
PANVIR	5	Panicum virgatum	-1	FAC+	Nt P-Grass	SWITCH GRASS
PARQUI	2	Parthenocissus quinquefolia	1	FAC-	Nt W-Vine	VIRGINIA CREEPER
PASSAT	0	PASTINACA SATIVA	5	UPL	Ad B-Forb	WILD PARSNIP
PETPUR	9	Petalostemum purpureum	5	UPL	Nt P-Forb	PURPLE PRAIRIE CLOVER
PHAARU	0	PHALARIS ARUNDINACEA	-4	FACW+	Ad P-Grass	REED CANARY GRASS
PHLPRA	0	PHLEUM PRATENSE	3	FACU	Ad P-Grass	TIMOTHY
PHYSUB	0	Physalis subglabrata	5	UPL	Nt P-Forb	TALL GROUND CHERRY
PHYAME	1	Phytolacca americana	1	FAC-	Nt P-Forb	POKEWEED
PLALAN	0	PLANTAGO LANCEOLATA	0	FAC	Ad P-Forb	ENGLISH PLANTAIN
PLARUG	0	Plantago rugelii	0	FAC	Nt A-Forb	RED-STALKED PLANTAIN
POAPRA	0	POA PRATENSIS	1	FAC-	Ad P-Grass	KENTUCKY BLUE GRASS
POLAVI	0	POLYGONUM AVICULARE	1	FAC-	Ad A-Forb	COMMON KNOTWEED
POLCOC	4	Polygonum coccineum	-5	OBL	Nt P-Forb	WATER HEARTSEASE
POLCON	0	POLYGONUM CONVOLVULUS	1	FAC-	Ad A-Forb	BLACK BINDWEED
POLPEN	0	Polygonum pensylvanicum	-4	FACW+	Nt A-Forb	PINKWEED
POPCAN	0	POPULUS CANESCENS	5	UPL	Ad Tree	GRAY POPLAR
POPDEL	2	Populus deltoides	-1	FAC+	Nt Tree	EASTERN COTTONWOOD
POTSIS	4	Potentilla simplex	4	FACU-	Nt P-Forb	COMMON CINQUEFOIL
QUERUB	7	Quercus rubra	3	FACU	Nt Tree	RED OAK
RATPIN	4	Ratibida pinnata	5	UPL	Nt P-Forb	YELLOW CONEFLOWER
RHACAT	0	RHAMNUS CATHARTICA	3	FACU	Ad Shrub	COMMON BUCKTHORN
RHUGLA	1	Rhus glabra	5	UPL	Nt Shrub	SMOOTH SUMAC
RHUTYP	1	Rhus typhina	5	UPL	Nt Tree	STAGHORN SUMAC
RUBOCC	2	Rubus occidentalis	5	UPL	Nt Shrub	BLACK RASPBERRY
RUDHIR	1	Rudbeckia hirta	3	FACU	Nt P-Forb	BLACK-EYED SUSAN
RUDTRI	3	Rudbeckia triloba	1	FAC-	Nt A-Forb	BROWN-EYED SUSAN
RUMCRI	0	RUMEX CRISPUS	-1	FAC+	Ad P-Forb	CURLY DOCK
SALAMY	5	Salix amygdaloides	-3	FACW	Nt Tree	PEACH-LEAVED WILLOW
SALINT	1	Salix interior	-5	OBL	Nt Shrub	SANDBAR WILLOW
SALNIG	4	Salix nigra	-5	OBL	Nt Tree	BLACK WILLOW
SETFAB	0	SETARIA FABERI	2	FACU+	Ad A-Grass	GIANT FOXTAIL
SETGLA	0	SETARIA GLAUCA	0	FAC	Ad A-Grass	YELLOW FOXTAIL
SETVIV	0	SETARIA VIRIDIS	1	[FAC-]	Ad A-Grass	GREEN FOXTAIL
SILIND	5	Silphium integrifolium deamii	5	UPL	Nt P-Forb	DEAM'S ROSIN WEED
SILLAC	5	Silphium laciniatum	5	UPL	Nt P-Forb	COMPASS PLANT
SILPER	5	Silphium perfoliatum	-2	FACW-	Nt P-Forb	CUP PLANT
SOLAME	0	Solanum americanum	4	FACU-	Nt A-Forb	BLACK NIGHTSHADE
SOLCAR	0	SOLANUM CAROLINENSE	4	FACU-	Ad P-Forb	HORSE NETTLE
SOLALT	1	Solidago altissima	3	FACU	Nt P-Forb	TALL GOLDENROD
SOLCAN	1	Solidago canadensis	3	FACU	Nt P-Forb	CANADA GOLDENROD
SOLRIG	4	Solidago rigida	4	FACU-	Nt P-Forb	STIFF GOLDENROD
SONOLE	0	SONCHUS OLERACEUS	5	[UPL]	Ad A-Forb	STORE-FRONT SOW THISTLE
SORNUT	5	Sorghastrum nutans	2	FACU+	Nt P-Grass	INDIAN GRASS
SPOVAG	0	*Sporobolus vaginiflorus*	5	UPL	Nt A-Grass	SHEATHED RUSH GRASS
TEUCAN	3	Teucrium canadense	-3	FACW	Nt P-Forb	GERMANDER
THLARV	0	THLASPI ARVENSE	5	UPL	Ad A-Forb	PENNY CRESS
TRIPRA	0	TRIFOLIUM PRATENSE	5	UPL	Ad P-Forb	RED CLOVER
ULMPUM	0	ULMUS PUMILA	5	UPL	Ad Tree	SIBERIAN ELM

VERBLT	0	VERBASCUM BLATTARIA	3	FACU	Ad B-Forb	MOTH MULLEIN
VERTHA	0	VERBASCUM THAPSUS	5	UPL	Ad B-Forb	COMMON MULLEIN
VERHAS	4	Verbena hastata	-4	FACW+	Nt P-Forb	BLUE VERVAIN
VITRIP	2	Vitis riparia	-2	FACW-	Nt W-Vine	RIVERBANK GRAPE
XANSTR	0	XANTHIUM STRUMARIUM	0	FAC	Ad A-Forb	COCKLEBUR

APPENDIX III

TRANSECT SAMPLING & FLORISTIC QUALITY ASSESSMENT

The following is a summary of the transect data generated using Wilhelm and Masters' *Floristic Quality Assessment and Computer Applications*, 1999. Plant nomenclature follows Swink and Wilhelm's *Plants of the Chicago Region*, 1994. More information on floristic quality assessment methodology can be found in *Erigenia*, number 15, November, 1997. The results of each transect are presented in four sections as described below.

Section 1 is a summary of the quadrat data for the transect. The data listed for each quadrat includes the mean coefficient of conservatism (MC), floristic quality index (FQI), and mean wetness (MW). These values are calculated once for native species only, and a second time including adventive species (W/Ad). Also presented for each quadrat are the number of native species (NS), and number of total species (TS). Shown below each of these columns are their values averaged per quadrat (AVG), and standard deviation (STD). The columns to the far right are sequential averages of the wetness coefficients ([(x+n+y)/3]), data that can be useful in the evaluation of plants along a slope or topographical catena.

Section 2 is a summary these same values for the entire transect. First, there is a tabulation of the species in each conservatism category (0 to 10) and the percentage of species in three conservatism classes (0 to 3, 4 to 6, 7 to 10). The two columns below summarize the number and percent of species in each physiognomic group (A=annual, B=biennial, P=perennial, W=woody, H= herbaceous). Next, there is a summary of the relative importance values (RIV) of each physiognomic group. These values are calculated by summing the frequency (FRQ) and the cover class (COV) of each group found in the transect then dividing by two.

Section 3 is a table that lists the relative importance values for each species found in the transect sampling, calculated in the same manner described above. Each scientific name is followed by its coefficient of conservatism and wetland indicator status.

Section 4 is the transect inventory arranged alphabetically to scientific name. This is followed by a list of the quadrats along the transect string that includes the cover class value determined for each species recorded in the quadrat.

Site: Blackwell Prairie - **Transect 1**
Locale: Warrenville, IL
Date: September 19, 2003
By: Conservation Design Forum (K. Johnson)
File: c:\fqa\studies\blackwell2003tr1.tra

SECTION 1

				TRANSECT DATA, QUADRAT						
QUAD	MC	W/Ad	FQI	W/Ad	MW	W/Ad	NS	TS	MW SEQ	W/Ad
1	0.0	0.0	0.0	0.0	0.0	2.3	2	6	0.1	1.7
2	3.3	1.9	6.5	4.9	0.3	1.1	4	7	0.9	2.1
3	4.3	1.9	7.5	4.9	2.3	2.7	3	7	1.2	2.2
4	4.0	1.3	5.7	3.3	1.0	2.8	2	6	2.0	3.0
5	2.2	1.6	4.9	4.2	2.8	3.4	5	7	1.6	2.8
6	3.3	1.9	6.5	4.9	1.0	2.3	4	7	2.3	3.0
7	3.3	1.9	6.5	4.9	3.0	3.1	4	7	1.0	2.5
8	5.0	1.0	5.0	2.2	-1.0	2.0	1	5	1.2	2.4
9	3.3	2.2	6.5	5.3	1.8	2.0	4	6	0.9	2.4
10	0.5	0.2	0.7	0.4	2.0	3.3	2	6	1.9	2.7
AVG	2.9	1.4	5.0	3.5	1.3	2.5	3.1	6.4		
STD	1.6	0.8	2.6	2.0	1.3	0.7	1.3	0.7		

SECTION 2

C	NUMBER	
0	5	
1	1	
2	0	0 to 3
3	1	58.3%
4	0	
5	4	
6	0	4 to 7
7	0	33.3%
8	1	
9	0	8 to 10
10	0	8.3%

12	NATIVE SPECIES
28	TOTAL SPECIES
2.7	NATIVE MEAN C
1.1	W/Adventives
9.2	NATIVE FQI
6.0	W/Adventives
1.8	NATIVE MEAN W
2.3	W/Adventives

Native	12	42.9%	Adventive	16	57.1%
Tree	0	0.0%	Tree	0	0.0%
Shrub	0	0.0%	Shrub	0	0.0%
W-Vine	0	0.0%	W-Vine	0	0.0%
H-Vine	0	0.0%	H-Vine	0	0.0%
P-Forb	3	10.7%	P-Forb	2	7.1%
B-Forb	0	0.0%	B-Forb	3	10.7%
A-Forb	3	10.7%	A-Forb	6	21.4%
P-Grass	4	14.3%	P-Grass	4	14.3%
A-Grass	2	7.1%	A-Grass	1	3.6%
P-Sedge	0	0.0%	P-Sedge	0	0.0%
A-Sedge	0	0.0%	A-Sedge	0	0.0%
Cryptogam	0	0.0%			

PHYSIOGNOMIC RELATIVE IMPORTANCE VALUES

PHYSIOGNOMY	FRQ	COV	RFRQ	RCOV	RIV
Nt P-Grass	12	19	18.8	19.6	19.2
Ad A-Forb	11	15	17.2	15.5	16.3
Nt A-Grass	8	14	12.5	14.4	13.5
Ad P-Grass	7	15	10.9	15.5	13.2
Nt A-Forb	8	11	12.5	11.3	11.9
Ad P-Forb	8	11	12.5	11.3	11.9
Ad A-Grass	4	5	6.3	5.2	5.7
Nt P-Forb	3	4	4.7	4.1	4.4
Ad B-Forb	3	3	4.7	3.1	3.9

SECTION 3

SPECIES RELATIVE IMPORTANCE VALUES

SCIENTIFIC NAME	C	WETNESS	FRQ	COV	RFRQ	RCOV	RIV
Echinochloa crusgalli	0	FACW	7	13	10.9	13.4	12.2
Bouteloua curtipendula	8	UPL	7	12	10.9	12.4	11.7
TRIFOLIUM PRATENSE	0	UPL	6	8	9.4	8.2	8.8
HIBISCUS TRIONUM	0	UPL	5	8	7.8	8.2	8.0
Ambrosia artemisiifolia elatior	0	FACU	4	7	6.3	7.2	6.7
SETARIA FABERI	0	FACU+	4	5	6.3	5.2	5.7
AGROPYRON REPENS	0	FACU	2	5	3.1	5.2	4.1
Euphorbia supina	0	FACU-	3	3	4.7	3.1	3.9
FESTUCA ELATIOR	0	FACU+	2	4	3.1	4.1	3.6
ABUTILON THEOPHRASTI	0	FACU-	2	3	3.1	3.1	3.1
Andropogon gerardii	5	FAC-	2	3	3.1	3.1	3.1
MEDICAGO SATIVA	0	UPL	2	3	3.1	3.1	3.1
Panicum virgatum	5	FAC+	2	3	3.1	3.1	3.1
POA PRATENSIS	0	FAC-	1	4	1.6	4.1	2.8
DACTYLIS GLOMERATA	0	FACU	2	2	3.1	2.1	2.6
Heliopsis helianthoides	5	UPL	1	2	1.6	2.1	1.8
ALLIARIA PETIOLATA	0	FAC	1	1	1.6	1.0	1.3
Andropogon scoparius	5	FACU-	1	1	1.6	1.0	1.3
BRASSICA NIGRA	0	UPL	1	1	1.6	1.0	1.3
CHENOPODIUM ALBUM	0	FAC-	1	1	1.6	1.0	1.3
Convolvulus sepium	1	FAC	1	1	1.6	1.0	1.3
Echinacea purpurea	3	UPL	1	1	1.6	1.0	1.3
KOCHIA SCOPARIA	0	FACU-	1	1	1.6	1.0	1.3
LACTUCA SERRIOLA	0	FAC	1	1	1.6	1.0	1.3
MELILOTUS ALBA	0	FACU	1	1	1.6	1.0	1.3
Panicum dichotomiflorum	0	FACW-	1	1	1.6	1.0	1.3
Plantago rugelii	0	FAC	1	1	1.6	1.0	1.3
POLYGONUM AVICULARE	0	FAC-	1	1	1.6	1.0	1.3
			64	97			

SECTION 4

ACRONYM	C	SCIENTIFIC NAME	W	WETNESS	PHYSIOGNOMY	COMMON NAME
ABUTHE	0	ABUTILON THEOPHRASTI	4	FACU-	Ad A-Forb	VELVETLEAF
AGRREP	0	AGROPYRON REPENS	3	FACU	Ad P-Grass	QUACK GRASS
ALLPET	0	ALLIARIA PETIOLATA	0	FAC	Ad B-Forb	GARLIC MUSTARD
AMBARE	0	Ambrosia artemisiifolia elatior	3	FACU	Nt A-Forb	COMMON RAGWEED
ANDGER	5	Andropogon gerardii	1	FAC-	Nt P-Grass	BIG BLUESTEM GRASS
ANDSCO	5	Andropogon scoparius	4	FACU-	Nt P-Grass	LITTLE BLUESTEM GRASS
BOUCUR	8	Bouteloua curtipendula	5	UPL	Nt P-Grass	SIDE-OATS GRAMA
BRANIG	0	BRASSICA NIGRA	5	UPL	Ad A-Forb	BLACK MUSTARD
CHEALB	0	CHENOPODIUM ALBUM	1	FAC-	Ad A-Forb	LAMB'S QUARTERS
CONSEP	1	Convolvulus sepium	0	FAC	Nt P-Forb	HEDGE BINDWEED
DACGLO	0	DACTYLIS GLOMERATA	3	FACU	Ad P-Grass	ORCHARD GRASS
ECHPUR	3	Echinacea purpurea	5	UPL	Nt P-Forb	BROAD-LEAVED PURPLE CONEFLOWER
ECHCRU	0	Echinochloa crusgalli	-3	FACW	Nt A-Grass	BARNYARD GRASS
EUPSUP	0	Euphorbia supina	4	FACU-	Nt A-Forb	SPOTTED CREEPING SPURGE

FESELA	0	FESTUCA ELATIOR	2	FACU+	Ad P-Grass	TALL FESCUE
HELHEL	5	Heliopsis helianthoides	5	UPL	Nt P-Forb	FALSE SUNFLOWER
HIBTRI	0	HIBISCUS TRIONUM	5	UPL	Ad A-Forb	FLOWER-OF-AN-HOUR
KOCSCO	0	KOCHIA SCOPARIA	4	FACU-	Ad A-Forb	BURNING BUSH
LACSER	0	LACTUCA SERRIOLA	0	FAC	Ad B-Forb	PRICKLY LETTUCE
MEDSAT	0	MEDICAGO SATIVA	5	UPL	Ad P-Forb	ALFALFA
MELALB	0	MELILOTUS ALBA	3	FACU	Ad B-Forb	WHITE SWEET CLOVER
PANDII	0	Panicum dichotomiflorum	-2	FACW-	Nt A-Grass	KNEE GRASS
PANVIR	5	Panicum virgatum	-1	FAC+	Nt P-Grass	SWITCH GRASS
PLARUG	0	Plantago rugelii	0	FAC	Nt A-Forb	RED-STALKED PLANTAIN
POAPRA	0	POA PRATENSIS	1	FAC-	Ad P-Grass	KENTUCKY BLUE GRASS
POLAVI	0	POLYGONUM AVICULARE	1	FAC-	Ad A-Forb	COMMON KNOTWEED
SETFAB	0	SETARIA FABERI	2	FACU+	Ad A-Grass	GIANT FOXTAIL
TRIPRA	0	TRIFOLIUM PRATENSE	5	UPL	Ad P-Forb	RED CLOVER

TRANSECT STRING

>

QUAD	1
ACRONYM	COVER
AGRREP	4
AMBARE	2
BRANIG	1
ECHCRU	1
MEDSAT	2
POAPRA	4

>

QUAD	2
ACRONYM	COVER
ALLPET	1
ANDGER	2
BOUCUR	2
ECHCRU	2
HIBTRI	1
PANDII	1
SETFAB	1

>

QUAD	3
ACRONYM	COVER
BOUCUR	1
ECHCRU	2
HELHEL	2
KOCSCO	1
POLAVI	1
SETFAB	1
TRIPRA	1

>

QUAD	4
ACRONYM	COVER
ABUTHE	1
BOUCUR	1
DACGLO	1
ECHCRU	2
HIBTRI	1
MELALB	1

>

QUAD	5
ACRONYM	COVER
AMBARE	2
BOUCUR	2
ECHCRU	3
ECHPUR	1
EUPSUP	1
HIBTRI	2
TRIPRA	2

>

QUAD	6
ACRONYM	COVER
AMBARE	1
BOUCUR	2
ECHCRU	1
FESELA	1
HIBTRI	1
PANVIR	1
TRIPRA	2

>

QUAD	7
ACRONYM	COVER
AGRREP	1
AMBARE	2
ANDSCO	1
BOUCUR	2
PLARUG	1
SETFAB	1
TRIPRA	1

>

QUAD	8
ACRONYM	COVER
CHEALB	1
DACGLO	1
FESELA	3
MEDSAT	1
PANVIR	2

>

QUAD	9
ACRONYM	COVER
ANDGER	1
BOUCUR	2
ECHCRU	2
EUPSUP	1
LACSER	1
TRIPRA	1

>

QUAD	10
ACRONYM	COVER
ABUTHE	2
CONSEP	1
EUPSUP	1
HIBTRI	3
SETFAB	2
TRIPRA	1

Site: Blackwell Prairie - **Transect 2**
Locale: Warrenville, IL
Date: September 19, 2003
By: Conservation Design Forum (K. Johnson)
File: c:\fqa\studies\blackwell2003tr2.tra

SECTION 1

TRANSECT DATA, QUADRAT

QUAD	MC	W/Ad	FQI	W/Ad	MW	W/Ad	NS	TS	MW SEQ	W/Ad
1	3.2	2.3	7.2	6.0	2.2	2.4	5	7	1.6	2.6
2	2.5	0.7	3.5	1.9	1.0	2.7	2	7	1.8	2.7
3	5.5	3.1	11.0	8.3	2.3	2.9	4	7	2.1	2.7
4	0.5	0.2	0.7	0.4	3.0	2.6	2	5	2.1	2.3
5	0.0	0.0	0.0	0.0	1.0	1.5	1	6	2.7	2.3
6	4.5	1.3	6.4	3.4	4.0	2.9	2	7	1.7	2.3
7	0.0	0.0	0.0	0.0	0.0	2.6	0	5	1.0	2.6
8	5.0	1.3	5.0	2.5	-1.0	2.3	1	4	-0.6	2.0
9	1.7	0.6	2.9	1.8	-0.7	1.1	3	8	-0.6	2.8
10	0.0	0.0	0.0	0.0	0.0	5.0	0	2	-0.3	3.1
AVG	2.3	1.0	3.7	2.4	1.2	2.6	2.0	5.8		
STD	2.2	1.1	3.7	2.8	1.6	1.0	1.6	1.8		

SECTION 2

C	NUMBER	
0	3	
1	2	
2	1	0 to 3
3	0	54.5%
4	2	
5	2	
6	0	4 to 7
7	0	36.4%
8	1	
9	0	8 to 10
10	0	9.1%

11 NATIVE SPECIES
30 TOTAL SPECIES
2.7 NATIVE MEAN C
1.0 W/Adventives
9.0 NATIVE FQI
5.5 W/Adventives
1.2 NATIVE MEAN W
2.0 W/Adventives

Native	11	36.7%	Adventive	19	63.3%
Tree	1	3.3%	Tree	1	3.3%
Shrub	0	0.0%	Shrub	0	0.0%
W-Vine	0	0.0%	W-Vine	0	0.0%
H-Vine	0	0.0%	H-Vine	0	0.0%
P-Forb	5	16.7%	P-Forb	5	16.7%
B-Forb	1	3.3%	B-Forb	3	10.0%
A-Forb	1	3.3%	A-Forb	5	16.7%
P-Grass	3	10.0%	P-Grass	3	10.0%
A-Grass	0	0.0%	A-Grass	2	6.7%
P-Sedge	0	0.0%	P-Sedge	0	0.0%
A-Sedge	0	0.0%	A-Sedge	0	0.0%
Cryptogam	0	0.0%			

PHYSIOGNOMIC RELATIVE IMPORTANCE VALUES

PHYSIOGNOMY	FRQ	COV	RFRQ	RCOV	RIV
Ad P-Forb	11	31	19.0	27.7	23.3
Ad B-Forb	11	20	19.0	17.9	18.4
Nt P-Grass	8	13	13.8	11.6	12.7
Nt P-Forb	8	13	13.8	11.6	12.7
Ad P-Grass	6	14	10.3	12.5	11.4
Ad A-Forb	7	8	12.1	7.1	9.6
Ad A-Grass	2	6	3.4	5.4	4.4
Nt A-Forb	2	2	3.4	1.8	2.6
Nt B-Forb	1	3	1.7	2.7	2.2
Ad Tree	1	1	1.7	0.9	1.3
Nt Tree	1	1	1.7	0.9	1.3

SECTION 3

SPECIES RELATIVE IMPORTANCE VALUES

SCIENTIFIC NAME	C	WETNESS	FRQ	COV	RFRQ	RCOV	RIV
CORONILLA VARIA	0	UPL	6	20	10.3	17.9	14.1
ALLIARIA PETIOLATA	0	FAC	5	10	8.6	8.9	8.8
BROMUS INERMIS	0	UPL	4	10	6.9	8.9	7.9
LEPIDIUM CAMPESTRE	0	UPL	4	6	6.9	5.4	6.1
Panicum virgatum	5	FAC+	3	6	5.2	5.4	5.3
Bouteloua curtipendula	8	UPL	3	5	5.2	4.5	4.8
Solidago altissima	1	FACU	3	4	5.2	3.6	4.4
Aster pilosus	0	FACU+	2	5	3.4	4.5	4.0
NEPETA CATARIA	0	FAC-	2	5	3.4	4.5	4.0
LACTUCA SERRIOLA	0	FAC	2	4	3.4	3.6	3.5
Ambrosia artemisiifolia elatior	0	FACU	2	2	3.4	1.8	2.6
CHENOPODIUM ALBUM	0	FAC-	2	2	3.4	1.8	2.6
POLYGONUM CONVOLVULUS	0	FAC-	2	2	3.4	1.8	2.6
SETARIA VIRIDIS	0	[FAC-]	1	4	1.7	3.6	2.6
Sorghastrum nutans	5	FACU+	2	2	3.4	1.8	2.6
Erigeron annuus	0	FAC-	1	3	1.7	2.7	2.2
LOTUS CORNICULATUS	0	FAC-	1	3	1.7	2.7	2.2
BRASSICA NIGRA	0	UPL	1	2	1.7	1.8	1.8
FESTUCA ELATIOR	0	FACU+	1	2	1.7	1.8	1.8
LOLIUM MULTIFLORUM	0	UPL	1	2	1.7	1.8	1.8
Monarda fistulosa	4	FACU	1	2	1.7	1.8	1.8
POA PRATENSIS	0	FAC-	1	2	1.7	1.8	1.8
RUMEX CRISPUS	0	FAC+	1	2	1.7	1.8	1.8
CIRSIUM ARVENSE	0	UPL	1	1	1.7	0.9	1.3
KOCHIA SCOPARIA	0	FACU-	1	1	1.7	0.9	1.3
Phytolacca americana	1	FAC-	1	1	1.7	0.9	1.3
POLYGONUM AVICULARE	0	FAC-	1	1	1.7	0.9	1.3
Polygonum coccineum	4	OBL	1	1	1.7	0.9	1.3
Populus deltoides	2	FAC+	1	1	1.7	0.9	1.3
ULMUS PUMILA	0	UPL	1	1	1.7	0.9	1.3
			58	112			

SECTION 4

ACRONYM	C	SCIENTIFIC NAME	W	WETNESS	PHYSIOGNOMY	COMMON NAME
ALLPET	0	ALLIARIA PETIOLATA	0	FAC	Ad B-Forb	GARLIC MUSTARD
AMBARE	0	Ambrosia artemisiifolia elatior	3	FACU	Nt A-Forb	COMMON RAGWEED
ASTPIL	0	Aster pilosus	2	FACU+	Nt P-Forb	HAIRY ASTER
BOUCUR	8	Bouteloua curtipendula	5	UPL	Nt P-Grass	SIDE-OATS GRAMA
BRANIG	0	BRASSICA NIGRA	5	UPL	Ad A-Forb	BLACK MUSTARD
BROINE	0	BROMUS INERMIS	5	UPL	Ad P-Grass	HUNGARIAN BROME
CHEALB	0	CHENOPODIUM ALBUM	1	FAC-	Ad A-Forb	LAMB'S QUARTERS
CIRARV	0	CIRSIUM ARVENSE	5	UPL	Ad P-Forb	FIELD THISTLE
CORVAR	0	CORONILLA VARIA	5	UPL	Ad P-Forb	CROWN VETCH

ERIANS	0	Erigeron annuus	1	FAC-	Nt B-Forb	ANNUAL FLEABANE
FESELA	0	FESTUCA ELATIOR	2	FACU+	Ad P-Grass	TALL FESCUE
KOCSCO	0	KOCHIA SCOPARIA	4	FACU-	Ad A-Forb	BURNING BUSH
LACSER	0	LACTUCA SERRIOLA	0	FAC	Ad B-Forb	PRICKLY LETTUCE
LEPCAM	0	LEPIDIUM CAMPESTRE	5	UPL	Ad B-Forb	FIELD CRESS
LOLMUL	0	LOLIUM MULTIFLORUM	5	UPL	Ad A-Grass	ITALIAN RYE GRASS
LOTCOR	0	LOTUS CORNICULATUS	1	FAC-	Ad P-Forb	BIRD'S FOOT TREFOIL
MONFIS	4	Monarda fistulosa	3	FACU	Nt P-Forb	WILD BERGAMOT
NEPCAT	0	NEPETA CATARIA	1	FAC-	Ad P-Forb	CATNIP
PANVIR	5	Panicum virgatum	-1	FAC+	Nt P-Grass	SWITCH GRASS
PHYAME	1	Phytolacca americana	1	FAC-	Nt P-Forb	POKEWEED
POAPRA	0	POA PRATENSIS	1	FAC-	Ad P-Grass	KENTUCKY BLUE GRASS
POLAVI	0	POLYGONUM AVICULARE	1	FAC-	Ad A-Forb	COMMON KNOTWEED
POLCOC	4	Polygonum coccineum	-5	OBL	Nt P-Forb	WATER HEARTSEASE
POLCON	0	POLYGONUM CONVOLVULUS	1	FAC-	Ad A-Forb	BLACK BINDWEED
POPDEL	2	Populus deltoides	-1	FAC+	Nt Tree	EASTERN COTTONWOOD
RUMCRI	0	RUMEX CRISPUS	-1	FAC+	Ad P-Forb	CURLY DOCK
SETVIV	0	SETARIA VIRIDIS	1	[FAC-]	Ad A-Grass	GREEN FOXTAIL
SOLALT	1	Solidago altissima	3	FACU	Nt P-Forb	TALL GOLDENROD
SORNUT	5	Sorghastrum nutans	2	FACU+	Nt P-Grass	INDIAN GRASS
ULMPUM	0	ULMUS PUMILA	5	UPL	Ad Tree	SIBERIAN ELM

TRANSECT STRING
>

QUAD	1
ACRONYM	COVER
ASTPIL	3
BOUCUR	2
LOTCOR	3
POPDEL	1
SOLALT	1
SORNUT	1
ULMPUM	1

>

QUAD	2
ACRONYM	COVER
AMBARE	1
CORVAR	1
LEPCAM	1
LOLMUL	2
PANVIR	2
POAPRA	2
SETVIV	4

>

QUAD	3
ACRONYM	COVER
BOUCUR	1
BROINE	4
LEPCAM	2
MONFIS	2
PANVIR	1
POLCON	1
SORNUT	1

>

QUAD	4
ACRONYM	COVER
AMBARE	1
BRANIG	2
CHEALB	1
NEPCAT	4
SOLALT	2

>

QUAD	5
ACRONYM	COVER
ALLPET	2
CORVAR	3
ERIANS	3
NEPCAT	1
POLAVI	1
POLCON	1

>

QUAD	6
ACRONYM	COVER
ALLPET	1
BOUCUR	2
BROINE	3
FESELA	2
LACSER	3
LEPCAM	2
SOLALT	1

>

QUAD	7
ACRONYM	COVER
ALLPET	3
CORVAR	3
KOCSCO	1
LEPCAM	1
RUMCRI	2

>

QUAD	8
ACRONYM	COVER
ALLPET	2
CIRARV	1
CORVAR	4
PANVIR	3

>

QUAD	9
ACRONYM	COVER
ALLPET	2
ASTPIL	2
BROINE	2
CHEALB	1
CORVAR	4
LACSER	1
PHYAME	1
POLCOC	1

>

QUAD	10
ACRONYM	COVER
BROINE	1
CORVAR	5

Site: Blackwell Prairie - **Transect 3**
Locale: Warrenville, IL
Date: September 19, 2003
By: Conservation Design Forum (K. Johnson)
File: *c:\fqa\studies\blackwell2003tr3.tra*

SECTION 1

TRANSECT DATA, QUADRAT

QUAD	MC	W/Ad	FQI	W/Ad	MW	W/Ad	NS	TS	MW SEQ	W/Ad
1	2.6	2.3	6.8	6.4	2.4	2.4	7	8	2.1	2.2
2	3.1	2.4	8.3	7.3	1.9	2.1	7	9	1.9	2.1
3	3.3	2.2	6.5	5.3	1.5	1.8	4	6	1.7	1.9
4	3.0	3.0	7.3	7.3	1.8	1.8	6	6	1.9	2.2
5	4.3	3.3	7.5	6.5	2.3	3.0	3	4	2.1	2.4
6	3.0	2.0	6.0	4.9	2.0	2.5	4	6	1.8	2.4
7	1.3	0.8	2.3	1.8	1.0	1.8	3	5	1.3	1.7
8	0.0	0.0	0.0	0.0	1.0	0.8	2	4	0.7	1.4
9	0.0	0.0	0.0	0.0	0.0	1.8	0	4	0.0	0.9
10	0.0	0.0	0.0	0.0	-1.0	0.3	1	4	-0.5	1.0
AVG	2.1	1.6	4.5	4.0	1.3	1.8	3.7	5.6		
STD	1.6	1.3	3.5	3.2	1.1	0.8	2.4	1.8		

SECTION 2

C	NUMBER	
0	5	
1	1	
2	0	0 to 3
3	0	50.0%
4	2	
5	3	
6	0	4 to 7
7	0	41.7%
8	1	
9	0	8 to 10
10	0	8.3%

12	NATIVE SPECIES
23	TOTAL SPECIES
2.7	NATIVE MEAN C
1.4	W/Adventives
9.2	NATIVE FQI
6.7	W/Adventives
2.3	NATIVE MEAN W
2.4	W/Adventives

Native	12	52.2%	Adventive	11	47.8%
Tree	0	0.0%	Tree	0	0.0%
Shrub	0	0.0%	Shrub	0	0.0%
W-Vine	0	0.0%	W-Vine	0	0.0%
H-Vine	0	0.0%	H-Vine	0	0.0%
P-Forb	3	13.0%	P-Forb	0	0.0%
B-Forb	1	4.3%	B-Forb	2	8.7%
A-Forb	3	13.0%	A-Forb	4	17.4%
P-Grass	5	21.7%	P-Grass	2	8.7%
A-Grass	0	0.0%	A-Grass	3	13.0%
P-Sedge	0	0.0%	P-Sedge	0	0.0%
A-Sedge	0	0.0%	A-Sedge	0	0.0%
Cryptogam	0	0.0%			

PHYSIOGNOMIC RELATIVE IMPORTANCE VALUES

PHYSIOGNOMY	FRQ	COV	RFRQ	RCOV	RIV
Nt P-Grass	16	34	28.6	31.8	30.2
Nt A-Forb	17	28	30.4	26.2	28.3
Ad P-Grass	6	19	10.7	17.8	14.2
Ad A-Grass	4	9	7.1	8.4	7.8
Ad A-Forb	5	6	8.9	5.6	7.3
Ad B-Forb	4	7	7.1	6.5	6.8
Nt P-Forb	3	3	5.4	2.8	4.1
Nt B-Forb	1	1	1.8	0.9	1.4

SECTION 3

SPECIES RELATIVE IMPORTANCE VALUES

SCIENTIFIC NAME	C	WETNESS	FRQ	COV	RFRQ	RCOV	RIV
Ambrosia trifida	0	FAC+	8	13	14.3	12.1	13.2
POA PRATENSIS	0	FAC-	5	18	8.9	16.8	12.9
Bouteloua curtipendula	8	UPL	6	15	10.7	14.0	12.4
Ambrosia artemisiifolia elatior	0	FACU	7	12	12.5	11.2	11.9
Panicum virgatum	5	FAC+	5	11	8.9	10.3	9.6
LACTUCA SERRIOLA	0	FAC	3	6	5.4	5.6	5.5
Elymus canadensis	4	FAC-	3	4	5.4	3.7	4.5
LOLIUM MULTIFLORUM	0	UPL	2	5	3.6	4.7	4.1
Lepidium virginicum	0	FACU-	2	3	3.6	2.8	3.2
THLASPI ARVENSE	0	UPL	2	2	3.6	1.9	2.7
SETARIA FABERI	0	FACU+	1	3	1.8	2.8	2.3
Andropogon gerardii	5	FAC-	1	2	1.8	1.9	1.8
POLYGONUM AVICULARE	0	FAC-	1	2	1.8	1.9	1.8
Sorghastrum nutans	5	FACU+	1	2	1.8	1.9	1.8
FESTUCA ELATIOR	0	FACU+	1	1	1.8	0.9	1.4
HIBISCUS TRIONUM	0	UPL	1	1	1.8	0.9	1.4
MEDICAGO LUPULINA	0	FAC-	1	1	1.8	0.9	1.4
Monarda fistulosa	4	FACU	1	1	1.8	0.9	1.4
Oenothera biennis	0	FACU	1	1	1.8	0.9	1.4
PASTINACA SATIVA	0	UPL	1	1	1.8	0.9	1.4
Physalis subglabrata	0	UPL	1	1	1.8	0.9	1.4
Rudbeckia hirta	1	FACU	1	1	1.8	0.9	1.4
SETARIA GLAUCA	0	FAC	1	1	1.8	0.9	1.4
			56	107			

SECTION 4

ACRONYM	C	SCIENTIFIC NAME	W	WETNESS	PHYSIOGNOMY	COMMON NAME
AMBARE	0	Ambrosia artemisiifolia elatior	3	FACU	Nt A-Forb	COMMON RAGWEED
AMBTRI	0	Ambrosia trifida	-1	FAC+	Nt A-Forb	GIANT RAGWEED
ANDGER	5	Andropogon gerardii	1	FAC-	Nt P-Grass	BIG BLUESTEM GRASS
BOUCUR	8	Bouteloua curtipendula	5	UPL	Nt P-Grass	SIDE-OATS GRAMA
ELYCAN	4	Elymus canadensis	1	FAC-	Nt P-Grass	CANADA WILD RYE
FESELA	0	FESTUCA ELATIOR	2	FACU+	Ad P-Grass	TALL FESCUE
HIBTRI	0	HIBISCUS TRIONUM	5	UPL	Ad A-Forb	FLOWER-OF-AN-HOUR
LACSER	0	LACTUCA SERRIOLA	0	FAC	Ad B-Forb	PRICKLY LETTUCE
LEPVIR	0	Lepidium virginicum	4	FACU-	Nt A-Forb	COMMON PEPPERCRESS
LOLMUL	0	LOLIUM MULTIFLORUM	5	UPL	Ad A-Grass	ITALIAN RYE GRASS
MEDLUP	0	MEDICAGO LUPULINA	1	FAC-	Ad A-Forb	BLACK MEDICK
MONFIS	4	Monarda fistulosa	3	FACU	Nt P-Forb	WILD BERGAMOT
OENBIE	0	Oenothera biennis	3	FACU	Nt B-Forb	COMMON EVENING PRIMROSE
PANVIR	5	Panicum virgatum	-1	FAC+	Nt P-Grass	SWITCH GRASS
PASSAT	0	PASTINACA SATIVA	5	UPL	Ad B-Forb	WILD PARSNIP
PHYSUB	0	Physalis subglabrata	5	UPL	Nt P-Forb	TALL GROUND CHERRY
POAPRA	0	POA PRATENSIS	1	FAC-	Ad P-Grass	KENTUCKY BLUE GRASS
POLAVI	0	POLYGONUM AVICULARE	1	FAC-	Ad A-Forb	COMMON KNOTWEED
RUDHIR	1	Rudbeckia hirta	3	FACU	Nt P-Forb	BLACK-EYED SUSAN
SETFAB	0	SETARIA FABERI	2	FACU+	Ad A-Grass	GIANT FOXTAIL
SETGLA	0	SETARIA GLAUCA	0	FAC	Ad A-Grass	YELLOW FOXTAIL
SORNUT	5	Sorghastrum nutans	2	FACU+	Nt P-Grass	INDIAN GRASS

THLARV 0 THLASPI ARVENSE 5 UPL Ad A-Forb PENNY CRESS

TRANSECT STRING
>

QUAD	1
ACRONYM	COVER
AMBARE	3
AMBTRI	1
BOUCUR	2
LEPVIR	2
PANVIR	2
PHYSUB	1
SETFAB	3
SORNUT	2

>

QUAD	2
ACRONYM	COVER
AMBARE	2
AMBTRI	2
BOUCUR	2
ELYCAN	1
MONFIS	1
PANVIR	3
POAPRA	2
RUDHIR	1
THLARV	1

>

QUAD	3
ACRONYM	COVER
AMBARE	1
AMBTRI	2
BOUCUR	2
LACSER	1
PANVIR	3
THLARV	1

>

QUAD	4
ACRONYM	COVER
AMBARE	1
AMBTRI	1
ANDGER	2
BOUCUR	2
LEPVIR	1
PANVIR	1

>

QUAD	5
ACRONYM	COVER
BOUCUR	5
OENBIE	1
PANVIR	2
PASSAT	1

>

QUAD	6
ACRONYM	COVER
AMBARE	1
AMBTRI	1
BOUCUR	2
ELYCAN	1
FESELA	1
LOLMUL	2

>

QUAD	7
ACRONYM	COVER
AMBARE	1
AMBTRI	2
ELYCAN	2
LOLMUL	3
POAPRA	3

>

QUAD	8
ACRONYM	COVER
AMBARE	3
AMBTRI	2
LACSER	2
POAPRA	4

>

QUAD	9
ACRONYM	COVER
HIBTRI	1
LACSER	3
MEDLUP	1
POAPRA	5

>

QUAD	10
ACRONYM	COVER
AMBTRI	2
POAPRA	4
POLAVI	2
SETGLA	1

Site: Blackwell Prairie - **Transect 4**
Locale: Warrenville, IL
Date: September 19, 2003
By: Conservation Design Forum (K. Johnson)
File: c:\fqa\studies\blackwell2003tr4.tra

SECTION 1

TRANSECT DATA, QUADRAT

QUAD	MC	W/Ad	FQI	W/Ad	MW	W/Ad	NS	TS	MW SEQ	W/Ad
1	0.0	0.0	0.0	0.0	-4.0	0.8	1	4	-1.7	1.2
2	2.5	0.8	3.5	2.0	0.5	1.7	2	6	-0.4	1.7
3	2.0	1.4	5.3	4.4	2.4	2.7	7	10	1.6	2.0
4	2.7	2.3	6.5	6.0	2.0	1.7	6	7	2.3	2.3
5	4.0	2.0	9.8	6.9	2.3	2.5	6	12	2.3	2.2
6	2.7	2.4	7.2	6.7	2.6	2.3	7	8	2.2	2.2
7	3.3	2.2	9.2	7.5	1.8	1.8	8	12	2.6	2.6
8	4.0	3.1	10.6	9.3	3.4	3.8	7	9	2.7	2.9
9	5.6	4.7	12.5	11.4	2.8	3.2	5	6	3.3	3.6
10	5.4	4.8	14.4	13.4	3.6	3.8	7	8	3.2	3.5
AVG	3.2	2.4	7.9	6.8	1.7	2.4	5.6	8.2		
STD	1.7	1.5	4.3	4.0	2.2	1.0	2.3	2.6		

SECTION 2

C	NUMBER	
0	7	
1	2	
2	0	0 to 3
3	1	45.5%
4	3	
5	7	
6	0	4 to 7
7	0	45.5%
8	1	
9	1	8 to 10
10	0	9.1%

22	NATIVE SPECIES
34	TOTAL SPECIES
3.1	NATIVE MEAN C
2.0	W/Adventives
14.7	NATIVE FQI
11.8	W/Adventives
2.1	NATIVE MEAN W
2.6	W/Adventives

Native	22	64.7%	Adventive	12	35.3%
Tree	0	0.0%	Tree	0	0.0%
Shrub	0	0.0%	Shrub	0	0.0%
W-Vine	0	0.0%	W-Vine	0	0.0%
H-Vine	0	0.0%	H-Vine	0	0.0%
P-Forb	10	29.4%	P-Forb	3	8.8%
B-Forb	0	0.0%	B-Forb	1	2.9%
A-Forb	6	17.6%	A-Forb	3	8.8%
P-Grass	6	17.6%	P-Grass	1	2.9%
A-Grass	0	0.0%	A-Grass	4	11.8%
P-Sedge	0	0.0%	P-Sedge	0	0.0%
A-Sedge	0	0.0%	A-Sedge	0	0.0%
Cryptogam	0	0.0%			

PHYSIOGNOMIC RELATIVE IMPORTANCE VALUES

PHYSIOGNOMY	FRQ	COV	RFRQ	RCOV	RIV
Nt P-Grass	23	40	28.0	31.3	29.6
Nt P-Forb	21	25	25.6	19.5	22.6
Nt A-Forb	12	19	14.6	14.8	14.7
Ad A-Grass	8	15	9.8	11.7	10.7
Ad B-Forb	7	16	8.5	12.5	10.5
Ad P-Forb	6	7	7.3	5.5	6.4
Ad A-Forb	4	4	4.9	3.1	4.0
Ad P-Grass	1	2	1.2	1.6	1.4

SECTION 3

SPECIES RELATIVE IMPORTANCE VALUES

SCIENTIFIC NAME	C	WETNESS	FRQ	COV	RFRQ	RCOV	RIV
LACTUCA SERRIOLA	0	FAC	7	16	8.5	12.5	10.5
Bouteloua curtipendula	8	UPL	5	11	6.1	8.6	7.3
Andropogon gerardii	5	FAC-	6	9	7.3	7.0	7.2
Rudbeckia hirta	1	FACU	5	7	6.1	5.5	5.8
Andropogon scoparius	5	FACU-	4	8	4.9	6.3	5.6
LOLIUM MULTIFLORUM	0	UPL	3	8	3.7	6.3	5.0
CIRSIUM ARVENSE	0	UPL	4	5	4.9	3.9	4.4
Heliopsis helianthoides	5	UPL	4	5	4.9	3.9	4.4
Ambrosia artemisiifolia elatior	0	FACU	3	6	3.7	4.7	4.2
Elymus canadensis	4	FAC-	3	5	3.7	3.9	3.8
Erigeron canadensis	0	FAC-	3	5	3.7	3.9	3.8
SETARIA FABERI	0	FACU+	3	5	3.7	3.9	3.8
Panicum virgatum	5	FAC+	3	4	3.7	3.1	3.4
Echinacea purpurea	3	UPL	3	3	3.7	2.3	3.0
Ambrosia trifida	0	FAC+	2	3	2.4	2.3	2.4
Aster ericoides	5	FACU-	2	3	2.4	2.3	2.4
Lepidium virginicum	0	FACU-	2	3	2.4	2.3	2.4
Sorghastrum nutans	5	FACU+	2	3	2.4	2.3	2.4
Aster novae-angliae	4	FACW	2	2	2.4	1.6	2.0
MEDICAGO LUPULINA	0	FAC-	2	2	2.4	1.6	2.0
FESTUCA ELATIOR	0	FACU+	1	2	1.2	1.6	1.4
Aster pilosus	0	FACU+	1	1	1.2	0.8	1.0
BRASSICA NIGRA	0	UPL	1	1	1.2	0.8	1.0
BROMUS TECTORUM	0	UPL	1	1	1.2	0.8	1.0
Convolvulus sepium	1	FAC	1	1	1.2	0.8	1.0
Euphorbia maculata	0	FACU	1	1	1.2	0.8	1.0
Helianthus mollis	9	UPL	1	1	1.2	0.8	1.0
HIBISCUS TRIONUM	0	UPL	1	1	1.2	0.8	1.0
MEDICAGO SATIVA	0	UPL	1	1	1.2	0.8	1.0
Monarda fistulosa	4	FACU	1	1	1.2	0.8	1.0
Polygonum pensylvanicum	0	FACW+	1	1	1.2	0.8	1.0
SETARIA GLAUCA	0	FAC	1	1	1.2	0.8	1.0
Silphium laciniatum	5	UPL	1	1	1.2	0.8	1.0
TRIFOLIUM PRATENSE	0	UPL	1	1	1.2	0.8	1.0
			82	128			

SECTION 4

ACRONYM	C	SCIENTIFIC NAME	W	WETNESS	PHYSIOGNOMY	COMMON NAME
AMBARE	0	Ambrosia artemisiifolia elatior	3	FACU	Nt A-Forb	COMMON RAGWEED
AMBTRI	0	Ambrosia trifida	-1	FAC+	Nt A-Forb	GIANT RAGWEED
ANDGER	5	Andropogon gerardii	1	FAC-	Nt P-Grass	BIG BLUESTEM GRASS
ANDSCO	5	Andropogon scoparius	4	FACU-	Nt P-Grass	LITTLE BLUESTEM GRASS
ASTERI	5	Aster ericoides	4	FACU-	Nt P-Forb	HEATH ASTER
ASTNOV	4	Aster novae-angliae	-3	FACW	Nt P-Forb	NEW ENGLAND ASTER
ASTPIL	0	Aster pilosus	2	FACU+	Nt P-Forb	HAIRY ASTER
BOUCUR	8	Bouteloua curtipendula	5	UPL	Nt P-Grass	SIDE-OATS GRAMA

BRANIG	0	BRASSICA NIGRA	5	UPL	Ad A-Forb	BLACK MUSTARD
BROTEC	0	BROMUS TECTORUM	5	UPL	Ad A-Grass	DOWNY BROME
CIRARV	0	CIRSIUM ARVENSE	5	UPL	Ad P-Forb	FIELD THISTLE
CONSEP	1	Convolvulus sepium	0	FAC	Nt P-Forb	HEDGE BINDWEED
ECHPUR	3	Echinacea purpurea	5	UPL	Nt P-Forb	BROAD-LEAVED PURPLE CONEFLOWER
ELYCAN	4	Elymus canadensis	1	FAC-	Nt P-Grass	CANADA WILD RYE
ERICAN	0	Erigeron canadensis	1	FAC-	Nt A-Forb	HORSEWEED
EUPMAA	0	Euphorbia maculata	3	FACU	Nt A-Forb	EYEBANE
FESELA	0	FESTUCA ELATIOR	2	FACU+	Ad P-Grass	TALL FESCUE
HELMOL	9	Helianthus mollis	5	UPL	Nt P-Forb	DOWNY SUNFLOWER
HELHEL	5	Heliopsis helianthoides	5	UPL	Nt P-Forb	FALSE SUNFLOWER
HIBTRI	0	HIBISCUS TRIONUM	5	UPL	Ad A-Forb	FLOWER-OF-AN-HOUR
LACSER	0	LACTUCA SERRIOLA	0	FAC	Ad B-Forb	PRICKLY LETTUCE
LEPVIR	0	*Lepidium virginicum*	4	FACU-	Nt A-Forb	*COMMON PEPPERCRESS*
LOLMUL	0	LOLIUM MULTIFLORUM	5	UPL	Ad A-Grass	ITALIAN RYE GRASS
MEDLUP	0	MEDICAGO LUPULINA	1	FAC-	Ad A-Forb	BLACK MEDICK
MEDSAT	0	MEDICAGO SATIVA	5	UPL	Ad P-Forb	ALFALFA
MONFIS	4	Monarda fistulosa	3	FACU	Nt P-Forb	WILD BERGAMOT
PANVIR	5	Panicum virgatum	-1	FAC+	Nt P-Grass	SWITCH GRASS
POLPEN	0	Polygonum pensylvanicum	-4	FACW+	Nt A-Forb	PINKWEED
RUDHIR	1	Rudbeckia hirta	3	FACU	Nt P-Forb	BLACK-EYED SUSAN
SETFAB	0	SETARIA FABERI	2	FACU+	Ad A-Grass	GIANT FOXTAIL
SETGLA	0	SETARIA GLAUCA	0	FAC	Ad A-Grass	YELLOW FOXTAIL
SILLAC	5	Silphium laciniatum	5	UPL	Nt P-Forb	COMPASS PLANT
SORNUT	5	Sorghastrum nutans	2	FACU+	Nt P-Grass	INDIAN GRASS
TRIPRA	0	TRIFOLIUM PRATENSE	5	UPL	Ad P-Forb	RED CLOVER

TRANSECT STRING

>

QUAD	1
ACRONYM	COVER
LACSER	4
MEDSAT	1
POLPEN	1
SETFAB	2

>

QUAD	2
ACRONYM	COVER
CIRARV	1
CONSEP	1
ELYCAN	1
FESELA	2
LACSER	3
SETFAB	2

>

QUAD	3
ACRONYM	COVER
AMBTRI	2
ANDGER	1
ASTERI	1
BRANIG	1
CIRARV	2
ECHPUR	1
ERICAN	1
LACSER	3
LEPVIR	1
RUDHIR	1

>

QUAD	4
ACRONYM	COVER
AMBARE	2
ANDGER	1
ANDSCO	1
ASTPIL	1
LACSER	2
PANVIR	2
RUDHIR	1

>

QUAD	5
ACRONYM	COVER
ASTNOV	1
BOUCUR	2
BROTEC	1
CIRARV	1
ECHPUR	1
ELYCAN	2
ERICAN	2
HELHEL	1
HIBTRI	1
LACSER	2
MEDLUP	1
SETGLA	1

>

QUAD	6
ACRONYM	COVER
AMBARE	2
AMBTRI	1
ASTERI	2
ELYCAN	2
LACSER	1
LEPVIR	2
SILLAC	1
SORNUT	1

>

QUAD	7
ACRONYM	COVER
ANDGER	1
ASTNOV	1
BOUCUR	2
ECHPUR	1
ERICAN	2
EUPMAA	1
LACSER	1
LOLMUL	4
MEDLUP	1
PANVIR	1
RUDHIR	2
SETFAB	1

>

QUAD	8
ACRONYM	COVER
AMBARE	2
ANDGER	2
ANDSCO	1
BOUCUR	3
HELHEL	2
LOLMUL	2
MONFIS	1
RUDHIR	1
TRIPRA	1

>

QUAD	9
ACRONYM	COVER
ANDGER	3
ANDSCO	3
BOUCUR	2
CIRARV	1
HELHEL	1
PANVIR	1

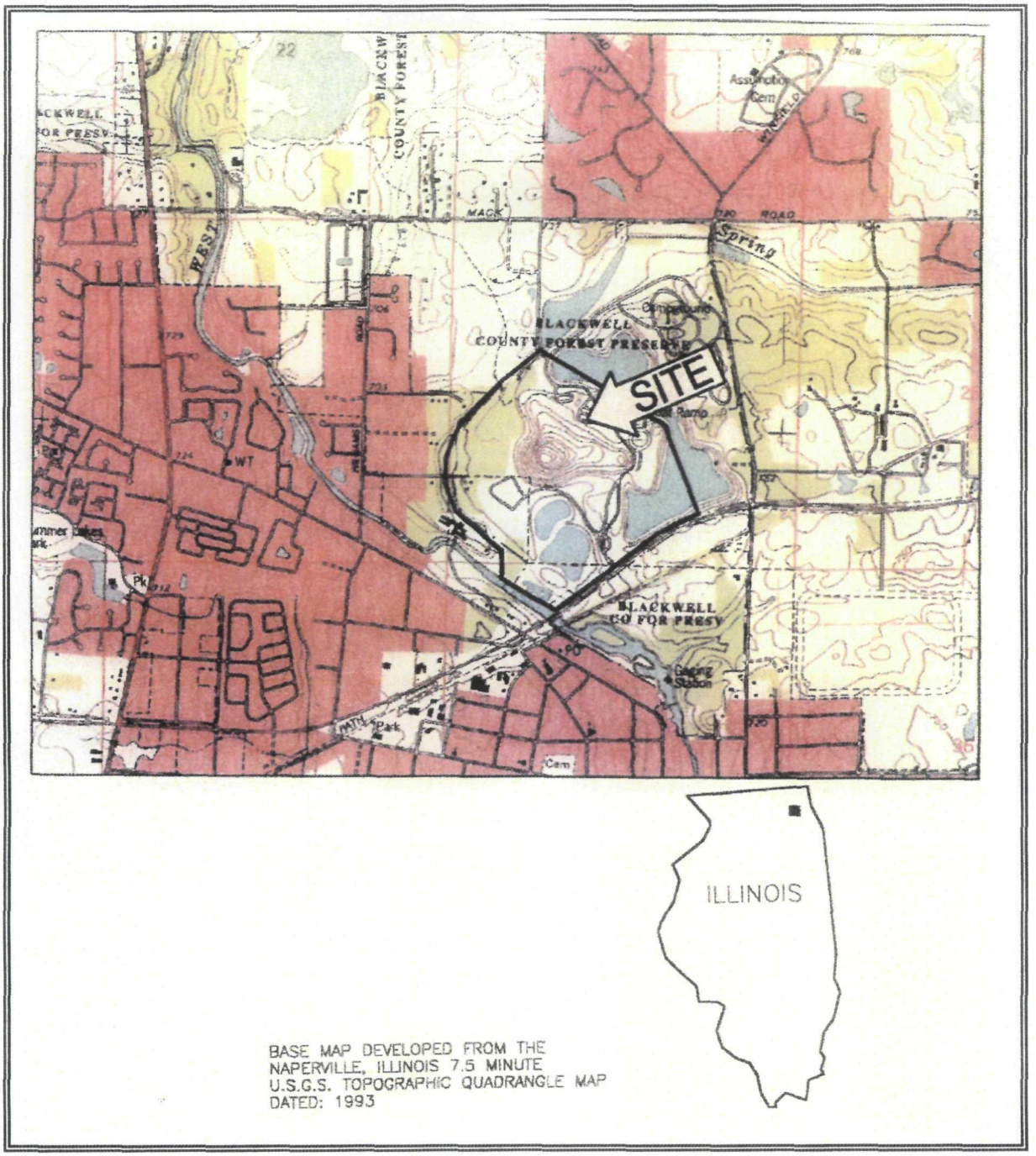
>

QUAD	10
ACRONYM	COVER
ANDGER	1
ANDSCO	3
BOUCUR	2
HELHEL	1
HELMOL	1
LOLMUL	2
RUDHIR	2
SORNUT	2

EXHIBITS

BLACKWELL LANDFILL PRAIRIE RESTORATION

Warrenville – DuPage County, Illinois



Project Number:
03045.00

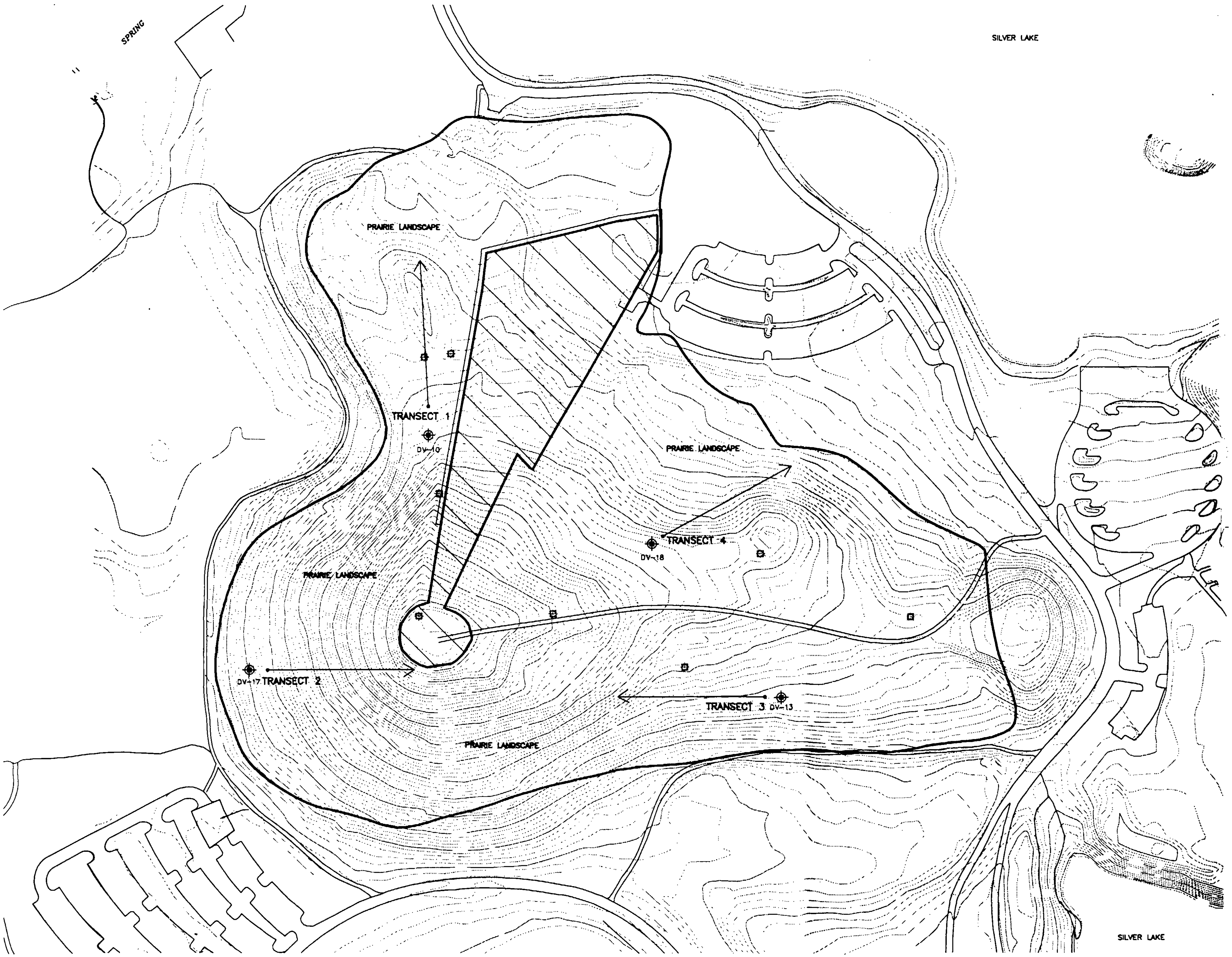
Date:
December 2003

Scale:
Not to Scale

EXHIBIT A

PROJECT LOCATION MAP

CONSERVATION DESIGN FORUM



LEGEND

GAS VENT

TRANSECT LINES

TOBOGGAN RUN
(OUTSIDE OF PROJECT AREA)

LEACHATE EXTRACTION WELL

PROJECT BOUNDARY

N
W E
S

Scale: 1" = 200'

0 100 200 400

CONSERVATION DESIGN FORUM

Landscape Architecture
Community Planning
Ecological Restoration
Resource Management

375 West First Street
Elmhurst, Illinois 60126
630.559.2000 phone
630.559.2030 fax

Client:
MWH
175 West Jackson Boulevard
Suite 1900
Chicago, Illinois 60604-2814

Exhibit B
Blackwell Landfill Prairie Restoration

Date: Dec 2003
drawn by HQ

Revisions: AL

Project Number: 003045.00

1

PHOTOGRAPHS

ABOVE Vegetation monitoring Transect 1.

BELOW Vegetation monitoring Transect 2.

ABOVE Vegetation monitoring Transect 3.

BELOW Vegetation monitoring Transect 4.

ABOVE West of toboggan run (impacted area that was re-seeded in the fall of 2002).

BELOW Hand mowing of select weeds.

ABOVE Mowing via tractor of large weed-infested areas.

BELOW Erosion remediation around vault east of the toboggan run.

ABOVE Prairie grasses and forbs in summer.

BELOW Prairie landscape in summer.

ABOVE Mowed fire break near top of slope.

BELOW Weed-whacking herbicided Crown Vetch thatch in late fall.

ABOVE Site preparation of herbicided Crown Vetch areas on back slopes.

BELOW Hand sowing prairie grass seed on back slopes.

ABOVE & BELOW Hydro-mulch application over newly seeded slopes.

ABOVE & BELOW Newly mulched slopes in late fall.